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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/697,585  | 10/29/2003  | Bradley Engstrand    | MOT-P-03-002        | 7691             |
| 29013   | 7590        | 09/30/2005           | EXAMINER            |                  |
| PATENTS+TMS, P.C.<br>2849 W. ARMITAGE AVE.<br>CHICAGO, IL 60647 |             |                      | LUU, THANH X        |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2878                |                  |

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/697,585

Applicant(s)

ENGSTRAND, BRADLEY

Examiner

Thanh X. Luu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/29/03 01/30/04 TXC
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the magnetic embodiment having a shaft must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

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1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Topol (U.S. Patent 3,787,703).

Regarding claims 18-20, Topol discloses (see Fig. 4) a method for measuring a position of a shaft (35) within a cylinder (14) having walls defining an interior wherein the cylinder has an aperture (at 49) within one of the walls and further wherein the cylinder has a shaft (35) within the interior wherein the shaft is movable, comprising the steps of: directing light (from 45) into the cylinder through the aperture (49); detecting (with 47) the light which enters the cylinder through the aperture; and relating an amount of light detected to the position of the shaft. Topol also discloses (see Fig. 5) placing a fluid within the cylinder.

4. Claims 1, 2, 4, 5, 7, 9, 11, 12 and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (U.S. Statutory Registration H277).

Regarding claims 1, 2, 4, 5 and 7, Lee et al. disclose (see Fig. 1) an apparatus for monitoring position, comprising: a cylinder (12) having walls defining an interior and having a length defined between a first end and a second end; a wall at the first end; a shaft (16) having a length defined between the first and second end wherein a portion of the shaft is within the cylinder and the shaft moves within the cylinder; a head (32) connected to the shaft; an aperture (where fiber pierces into interior 14) within the wall at the first end wherein light projects through the aperture into the cylinder; and a sensor (see Fig. 4) within the cylinder wherein the sensor detects intensity of light within the cylinder that corresponds to a position of the shaft. The light source (within 22) is adjacent the first end as claimed. Furthermore, the wall encloses the cylinder as claimed. Further, since air (a gas) is present in the cylinder, a fluid is within the cylinder as claimed. The sensor is adjacent to a second end of the cylinder.

Regarding claims 9, 11, 12 and 14-17, Lee et al. disclose (see Fig. 1) a system for monitoring position, comprising: a cylinder (12) having walls defining an interior (14) and having a shaft (16) within the interior wherein the shaft extends through a wall of the cylinder, the shaft is movable within the cylinder and further wherein the cylinder has a aperture (where fiber pierces into interior 14) in the wall adjacent to the shaft; and a sensor (within 22) within the cylinder wherein the sensor detects light within the cylinder and wherein an amount of light detected by the sensor corresponds to a position of the shaft within the cylinder. Lee et al. also disclose (see Fig. 1) a head (32) attached to the shaft, a light source is adjacent the aperture and a processor (within 22). Lee et al. also disclose (see Fig. 2) a coating on the shaft wherein the coating absorbs light

(differing/low reflectivity). Further, since air (a gas) is present in the cylinder, a fluid is within the cylinder as claimed. The fiber serves as a window as claimed.

Regarding claims 18-20, Lee et al. disclose (see Fig. 1) a method for measuring a position of a shaft (16) within a cylinder (12) having walls defining an interior (14) wherein the cylinder has an aperture (at where fibers pierce the interior 14) within one of the walls and further wherein the cylinder has a shaft (16) within the interior wherein the shaft is movable, comprising the steps of: (see Fig. 4) directing light into the cylinder through the aperture; detecting the light which enters the cylinder through the aperture; and relating an amount of light detected to the position of the shaft. Further, since air (a gas) is present in the cylinder, a fluid is within the cylinder as claimed.

5. Claims 1-6, 7, 9, 11-13 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wickman et al. (U.S. Patent 3,703,682).

Regarding claims 1-6, 7, 9, 11-13 and 18-20, Wickman et al. disclose (see Fig. 2) an apparatus for monitoring position, comprising: a cylinder (11, 49) having walls defining an interior and having a length defined between a first end and a second end; a wall at the first end; a shaft (41) having a length defined between the first and second end wherein a portion of the shaft is within the cylinder and the shaft moves within the cylinder; a head (47) connected to the shaft; an aperture (15; see Fig. 1) within the wall at the first end wherein light projects through the aperture into the cylinder; and a sensor (27; see Fig. 1) within the cylinder wherein the sensor detects intensity of light within the cylinder that corresponds to a position of the shaft. The light source (at 21) is adjacent the first end and the aperture is at the center of the wall as claimed. Furthermore, the

wall encloses the cylinder as claimed. Further, since air (a gas) is present in the cylinder, a fluid is within the cylinder as claimed. Wickman et al. also disclose (see Fig. 2) a second shaft (37) within the cylinder. The sensor is adjacent to the second end of the cylinder.

6. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by MacDonald et al. (U.S. Patent 5,291,031).

Regarding claims 18-20, MacDonald et al. disclose (see Fig. 1) a method for measuring a position of a shaft (9) within a cylinder (7) having walls (top and side) defining an interior wherein the cylinder has an aperture (at 3) within one of the walls (top) and further wherein the cylinder has a shaft (9) within the interior wherein the shaft is movable, comprising the steps of: directing light (from 1) into the cylinder through the aperture (3); detecting (with at least 19 and 20) the light which enters the cylinder through the aperture; and relating (with 11) an amount of light detected to the position of the shaft. Since air (a gas) is placed in the cylinder, there is a fluid in the cylinder as claimed.

7. Claims 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kidwell (U.S. Patent 5,164,605).

Regarding claims 18 and 19, Kidwell discloses (see Fig. 2b) a method for measuring a position of a shaft (24 or 40) within a cylinder (20) having walls defining an interior wherein the cylinder has an aperture (at where 34 enters cylinder) within one of the walls and further wherein the cylinder has a shaft (24 or 40) within the interior wherein the shaft is movable, comprising the steps of: directing light (from 30) into the

cylinder through the aperture; detecting (with 32) the light which enters the cylinder through the aperture; and relating an amount of light detected to the position of the shaft.

8. Claims 9-11, 14, 15 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. (U.S. Patent 6,730,927).

Regarding claims 9-11, 14, 15 and 18-20, Smith et al. disclose (see Figs. 1 and 4) a system for monitoring position, comprising: a cylinder (12) having walls defining an interior and having a shaft (14) within the interior wherein the shaft extends through a wall of the cylinder, the shaft is movable within the cylinder and further wherein the cylinder has a aperture (at window 30; see Fig. 4) in the wall adjacent to the shaft; and a sensor (20; see Fig. 1) within the cylinder wherein the sensor detects light within the cylinder and wherein an amount of light detected by the sensor corresponds to a position of the shaft within the cylinder.

9. Claims 1, 2, 4, 5, 7, 9-12, 14-16 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Arshad et al. (U.S. Patent 6,484,620).

Regarding claims 1, 2, 4, 5, 7, 9-12 and 14-16, Arshad et al. disclose (see Fig. 1) an apparatus for monitoring position, comprising: a cylinder (12) having walls defining an interior and having a length defined between a first end and a second end; a wall at the first end; a shaft (24) having a length defined between the first and second end wherein a portion of the shaft is within the cylinder and the shaft moves within the cylinder; a head (22) connected to the shaft; an aperture (at window 46) within the wall at the first end wherein light projects through the aperture into the cylinder; and a sensor

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(48, 40) within the cylinder wherein the sensor detects intensity of light within the cylinder that corresponds to a position of the shaft. The light source (36) is adjacent the first end and the aperture is at the center of the wall as claimed. Furthermore, the wall encloses the cylinder as claimed. Further, since air (a gas) is present in the cylinder, a fluid is within the cylinder as claimed. Arshad et al. also disclose (see Fig. 2) a second shaft (37) within the cylinder. The sensor is adjacent to the second end of the cylinder. Arshad et al. also disclose a head (22) attached to the shaft and a processor (39) connected to the sensor. Arshad et al. also disclose (see Fig. 2) placing a fluid (with 30) within the cylinder.

Regarding claims 18-20, Arshad et al. disclose (see Fig. 2) a method for measuring a position of a shaft (24) within a cylinder (12) having walls defining an interior wherein the cylinder has an aperture (at 46) within one of the walls and further wherein the cylinder has a shaft (24) within the interior wherein the shaft is movable, comprising the steps of: directing light (from 36) into the cylinder through the aperture; detecting (with 40) the light which enters the cylinder through the aperture; and relating an amount of light detected to the position of the shaft. Arshad et al. also disclose (see Fig. 2) placing a fluid (with 30) within the cylinder.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald et al. in view of Lee et al.

Regarding claims 1 and 8, MacDonald et al. disclose (see Figs.) the claimed invention as set forth above. MacDonald et al. also disclose a magnet (9) adjacent to the cylinder effecting movement of the head (8). MacDonald et al. do not specifically disclose the sensor within the cylinder. Lee et al. teach (see Figs.) providing a sensor (within 22) within the cylinder. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a sensor within the cylinder in the apparatus of MacDonald et al. in view of Lee et al. to obtain a more compact device.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, consisting of several fluid, overlapping strokes that form a stylized representation of the name 'Thanh X. Luu'.

Thanh X Luu  
Primary Examiner  
Art Unit 2878

09/2005